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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,104	09/19/2005	Dror Shemesh	6317P076	3403
	7590 08/23/2007 FERIALS/BLAKELY		EXAMINER	
1279 OAKMEAD PARKWAY			JOHNSTON, PHILLIP A	
SUNNYVALE, CA 94085-4040			ART UNIT	PAPER NUMBER
			2881	
			MAIL DATE	DELIVERY MODE
			08/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

1) Responsive to communication(s) filed on 19 September 2005. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-21 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) is/are allowed. 6) Claim(s) 1-21 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) The drawing(s) filed on 19 September 2005 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.			2 1					
## Examiner Philip A. Johnston 2881 ## Filip A. Johnston 3881 ## Filip A. Johnston 3881 ## A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. ## Examined a time may be available under the provisions of the CRF 1.198(a). In no event, however, may a way be timely filed ## WHO provide or reply a specified above, the maximum studiory perboval large and val expires XIV, MONTHS from the maing date of this communication. ## Filip A. Johnston 1981 ## WHO provide or reply a specified above, the maximum studiory perboval large and val expires XIV, MONTHS from the maing date of this communication. ## Filip A. Johnston 1982 ## WHO provide or reply a specified above, the maximum studiors be advantaged and value of the communication. ## Filip A. Johnston 1982 ## Responsive to communication(s) filed on 19 September 2005 ## Specified and the market of the main and the provided and the market of the market set of the main and the market set of the market of of the ma		Application No.	Applicant(s)					
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Art Unit: 2881

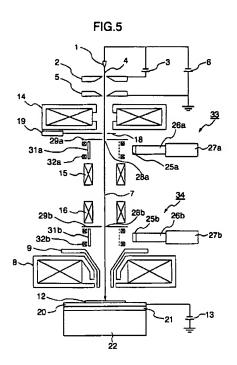
Detailed Action

Claims Rejection - 35 U.S. C. 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 2. Claims 1-3,5-11,13-15, and 17-20, are rejected under 35 U.S.C. 102 (b) as being anticipated by Todokoro, U.S. Patent No. 6,084,238.
- 3. Regarding claim 13, Todokoro discloses a system for multi detector detection of electrons, comprising: multiple interior detectors for providing detection signals; a column through which electrons may propagate (See Figure 5 below);



Todokoro also teaches a means for directing a primary electron beam, through the column, to interact with an inspected object and for directing, by

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introducing a substantial electrostatic field, electrons reflected or scattered from the inspected objects towards the multiple interior detectors (See Col. 2, line 20-26; and Col. 5, line 15-26), whereas at least some of the directed electrons are reflected or scattered at small angle in relation to the inspected object. See Col. 8, line 22-52.

It should be noted here that, Todokoro uses an electric field that reaches the surface of the wafer, which inherently implies that electrons, reflected or scattered at small angles, will also be directed up through the acceleration tube towards one of the detectors.

- 4. Regarding claim 1, Todokoro discloses all the structural limitations therein as pointed out above regarding claim 13.
- 5. Regarding claims 2,3,14, and 15, Todokoro discloses a first voltage potential difference between the inspected object and a first portion of the column and a second voltage potential difference between a second portion of the column and the inspected object, whereas the first portion of the column is positioned below the second portion and wherein the first voltage potential difference is smaller than the second voltage potential difference. See low acceleration voltage, at Col. 5, line 15-29.
- 6. Regarding claims 5 and 17, Todokoro teaches the use of different collection zones. See Col. 9, line 36-43.
- 7. Regarding claims 6-8,18, and 20, Todokoro teaches providing electrostatic or electromagnetic deflectors before and after the diaphragm 18 (note Figure 5 above) so as to suitably deflect the electron beam to adjust its centering (tilt). Col. 5, line 15-44.

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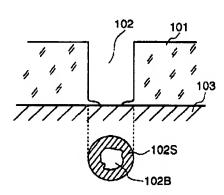
8. Regarding claims 9 and 19, Todokoro teaches an inspected area of the inspected object is positioned within the substantial electrostatic lens (note Figure 4); and Col. 8, line 16-21.

9. Regarding claims 10,11, and 20, Todokoro teaches tilting the sample and measuring the inclination (note Figure 12). Col. 14, line 5-50.

Claims Rejection – 35 U.S.C. 103

- 10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 11. Claims 4,12,16, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,084,238 to Todokoro, in view of Todokoro, U.S. Patent No. 6,635,873.
- 12. Todokoro (238) teaches all the required limitations of claim 4,12,16, and 21, as pointed out with respect to claim 13 above.
- 13. Todokoro (238) fails to disclose processing the received detection signals to provide an indication about a defect or a process variation; and wherein detected electrons include electrons from a lower portion of a high aspect ratio hole.
- 14. Todokoro (873) teaches observing residue at the bottom of a high aspect ratio contact hole. See Figure 14b below; Col. 2, line 8-18; and Col. 5, line 39-49.

FIG.14B



- 15. Todokoro (873) modifies Todokoro (238) to provide a technique for displaying the condition of a contact hole formed in an insulator on the display screen of a scanning electron microscope.
- 16. Therefore it would have been obvious to one of ordinary skill in the art that Todokoro (238) would use the contact hole imaging technique of Todokoro (873) to provide a scanning electron microscope for observing the bottom of a contact hole formed on an observation sample such as an IC.

Conclusion

17. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim

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can be reached at (571)272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ΡJ

August 16, 2007

ROBERT KIM SUPERVISORY PATENT EXAMINER